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<110> Sera, Takashi
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               Amino acids 1-3, 8-19 and 25-28 are Xaa wherein Xaa = any amino
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               (5)..(6)
         <223> Amino acid 5 is Xaa wherein Xaa = any amino acid, amino acids 5
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         and 6 together represent from 2 to 4 amino acids in length.
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      21-23 together represent from 3 to 5 amino acids in length.
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      and 6 together represent from 2 to 4 amino acids in length.
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           Amino acid 21 is Xaa wherein Xaa = any amino acid, amino acids
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21-23 together represent from 3 to 5 amino acids in length.

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                                         25
                                                             30
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                                     40
         Glu Cys Gly Lys Ser Phe Ser Arg Ser Ser His Leu Gln Gln His Gln
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                                 55
                                                      60
         Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Glu Cys Gly Lys
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                                                  75
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10	Gln Arg I	His Gln 35	Arg Thr	His Thr	Gly	Glu	Lys	Pro	Tyr 45	Lys	Cys	Pro
15	Glu Cys (Gly Lys	Ser Phe	Ser Glu 55	Ser	Ser	Asp	Leu 60	Gln	Arg	His	Gln
1,7	Arg Thr 1	His Thr	Gly Glu 70	Lys Pro	Tyr	Lys	Cys 75	Pro	Glu	Cys	Gly	Lys 80
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	Asn Lys	Lys										
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		9 RT	al Seque	nce								
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Met Glu Lys Leu Arg Asn Gly Ser Gly Asp Pro Gly Lys Lys Lys Gln

Gln Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro

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	10	Arg 65	Thr	His	Thr	Gly	Glu 70	Lys	Pro	Tyr	Lys	Cys 75	Pro	Glu	Cys	Gly	Lys 80
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His Ala Cys Pro Glu Cys Gly Lys Ser Phe Ser Gln Ser Ser Asn Leu

Gln Arg His Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro

Glu Cys Gly Lys Ser Phe Ser Gln Ser Ser Asn Leu Gln Arg His Gln

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5	Arg 5	Thr	His	Thr	Gly	Glu 70	Lys	Pro	Tyr	Lys	Cys 75	Pro	Glu	Cys	Gly	Lys 80
J	Ser l	Phe	Ser	Arg	Ser 85	Asp	His	Leu	Ser	Arg 90	His	Gln	Arg	Thr	His 95	Gln
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	Ser	Leu	Asp	Asp	Lys	Pro	Tyr	Lys	Cys	Thr	Glu	Cys	Glu	Lys	Ser	Phe
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Ser Gln Ser Ser Thr Leu Phe Gln His Gln Lys Ile His Thr Gly Lys

Lys Ser His Lys Cys Ala Asp Cys Gly Lys Ser Phe Phe Gln Ser Ser

Asn Leu Ile Gln His Arg Arg Ile His Thr Gly Glu Lys Pro Tyr Lys

Cys Asp Glu Cys Gly Glu Ser Phe Lys Gln Ser Ser Asn Leu Ile Gln

His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Gln Cys Asp Glu Cys

Gly Arg Cys Phe Ser Gln Ser Ser His Leu Ile Gln His Gln Arg Thr

His Thr Gly Glu Lys Pro Tyr Gln Cys Ser Glu Cys Gly Lys Cys Phe

Ser Gln Ser Ser His Leu Arg Gln His Met Lys Val His Lys Glu Glu

180 185 190

Lys Pro Arg Lys Thr Arg Gly Lys Asn Ile Arg Val Lys Thr His Leu 195 200 205

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Lys Tyr Arg Ala Phe

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Glu Ala Phe Glu Ser Gly Asp Gln Ala Glu Arg Pro Trp Gly Asp Leu 20 25 30

25

Thr Ala Glu Glu Trp Val Ser Tyr Pro Leu Gln Gln Val Thr Asp Leu 35 40 45

Leu Val His Lys Glu Ala His Ala Gly Ile Arg Tyr His Ile Cys Ser $30 \hspace{1.5cm} 50 \hspace{1.5cm} 55 \hspace{1.5cm} 60 \hspace{1.5cm}$

Gln Cys Gly Lys Ala Phe Ser Gln Ile Ser Asp Leu Asn Arg His Gln 65 70 75 80

Lys Thr His Thr Gly Asp Arg Pro Tyr Lys Cys Tyr Glu Cys Gly Lys
85 90 95

Gly Phe Ser Arg Ser Ser His Leu Ile Gln His Gln Arg Thr His Thr
100 105 110

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5	Ser	Ser 130	His	Leu	Ile	Gln	His 135	Gln	Thr	Ile	His	Thr 140	Gly	Glu	Lys	Pro
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	Arg	Thr	His 195	Thr	Gly	Glu	Lys	Pro 200	Tyr	Glu	Cys	His	Glu 205	Cys	Gly	Arg
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25	Gly 225	Glu	Arg	Pro	Tyr	Lys 230	Cys	Asp	Glu	Cys	Gly 235	Lys	Asn	Phe	Ser	Gln 240
	Asn	Ser	Asp	Leu	Val 245	Arg	His	Arg	Arg	Ala 250	His	Thr	Gly	Glu	Lys 255	Pro
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                                              330
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                  355
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> <223> Amino acid 15 is Xaa wherein Xaa = Z2 wherein Z2 = Ser or Arg, Asn or Gln, Thr, Val, or Ala, or Asp or Glu.

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                                                              15
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                                      25
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Thr Gly Glu Lys

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                                                               15
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                  20
                                      25
                                                           30
     Pro Glu Cys Gly Lys Ser Phe Ser Gln Ser Ser Asn Leu Gln Lys His
30
              35
                                  40
                                                       45
     Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Glu Cys Gly
          50
                              55
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   10
         <223> Nucleotides 15-17 are "n" wherein "n" = g, a, t, or c.
         <400> 33
tatatatagg ggaannnata tatata
                                                                              26
   15
         <210> 34
         <211> 26
         <212> DNA
         <213> Artificial Sequence
   20
         <220>
         <223> Zinc finger domain target sequence.
         <220>
   25
         <221> misc_feature
         <222>
               (15)..(17)
         <223> Nucleotides 15-17 are "n" wherein "n" = g, a, t, or c.
         <400> 34
   30
                                                                              26
         tatatatagg ggaannntta tatata
         <210> 35
         <211> 26
   35
         <212> DNA
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         <220>
         <223> Zinc finger domain target sequence.
```

<213> Artificial Sequence

70m

```
<220>
         <221> misc_feature
         <222>
                (15)..(17)
    5
         <223> Nucleotides 15-17 are "n" wherein "n" = g, a, t, or c.
         <400> 35
         tatatatagg ggaannncta tatata
                                                                                    26
   10
         <210> 36
         <211> 60
w.
         <212> DNA
15
         <213> Artificial Sequence
part here and the bank of hand and had bank and
         <220>
         <223> Partial zinc finger domain oligomer.
         <220>
   20
         <221> misc_feature
                (45)..(56)
         <222>
         <223> Nucleotides 45-47 and 51-56 are "n" wherein "n" = g, a, t, or c.
   25
         <400> 36
         ggggagaagc cgtataaatg tccggaatgt ggtaaaagtt ttagcnnnag cnnnnnnttg
                                                                                     60
         <210> 37
   30
         <211> 60
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         <220>
   35
         <223> Partial zinc finger domain oligomer.
         <220>
         <221> misc_feature
         <222> (37)..(51)
```

```
<223> Nucleotides 37-39 and 46-51 are "n" wherein "n" = g, a, t, or c.
      <400> 37
      tttgtatggt ttttcaccgg tatgggtacg ctgatgnnnc tqcaannnnn nqctnnnqct
                                                                            60
 5
      <210> 38
      <211>
             60
      <212> DNA
10
      <213> Artificial Sequence
      <220>
      <223>
            Partial zinc finger domain oligomer.
15
      <220>
      <221> misc_feature
      <222>
            (46)..(57)
      <223> Nucleotides 46-48 and 52-57 are "n" wherein "n" = g, a, t, or c.
20
      <400> 38
      ggtgaaaaac catacaaatg tccagagtgc ggcaaatctt tctctnnntc tnnnnnnctt
                                                                            60
      <210> 39
25
      <211> 60
      <212> DNA
      <213> Artificial Sequence
      <220>
30
      <223> Partial zinc finger domain oligomer.
      <220>
      <221> misc_feature
      <222>
            (37)..(51)
35
      <223> Nucleotides 37-39 and 46-51 are "n" wherein "n" = g, a, t, or c.
      <400> 39
      cttgtaagge ttctcgccag tgtgagtacg ctgatgnnnc tgaagnnnnn nagannnaga
                                                                            60
```

```
<210> 40
        <211> 56
    5
        <212> DNA
        <213> Artificial Sequence
        <220>
        <223> Partial zinc finger domain oligomer.
   10
        <220>
<221> misc_feature
        <222> (48)..(58)
        <223> Nucleotides 48-50 and 54-58 are "n" wherein "n" = g, a, t, or c.
  15
        <400> 40
        ggcgagaagc cttacaagtg ccctgaatgc gggaagagct ttagtnnnag tnnnnn
                                                                             56
   20
        <210> 41
        <211> 55
        <212> DNA
        <213> Artificial Sequence
   25
        <220>
        <223> Partial zinc finger domain oligomer.
        <220>
        <221> misc feature
   30
        <222>
               (28)..(48)
        <223> Nucleotides 28-30, 37-42 and 46-48 are "n" wherein "n" = g, a, t,
                or c
        <400> 41
   35
        cttctccccc gtgtgcgtgc gttggtgnnn ttgtaannnn nnactnnnac taaag
                                                                             55
         <210> 42
         <211> 45
```

```
<220>
                                 5
                                                                   <223> PCR primer.
                                                                   <400> 42
                                                                   gggcccggtc tcgaattcgg ggagaagccg tataaatgtc cggaa
                           10
                                                                   <210> 43
                                                                   <211> 48
15 and the second secon
                                                                   <212> DNA
                                                                   <213> Artificial Sequence
                                                                   <220>
                                                                   <223> PCR primer.
                                                                   <400> 43
                                                                   cccgggggtc tcaagctttt acttctcccc cgtgtgcgtg cgttggtg
                                                                   <210> 44
                          25
                                                                  <211> 10
                                                                   <212> DNA
                                                                   <213> Beet curly top virus
                                                                   <400> 44
                          30
                                                                  ttgggtgctc
                                                                   <210> 45
                                                                  <211> 60
```

48

10

<212> DNA

35

<212> DNA

<220>

<213> Artificial Sequence

<223> Partial zinc finger domain oligomer.

<213> Artificial Sequence

```
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         ggggagaagc cgtataaatg tccggaatgt ggtaaaagtt ttagcaccaq caqcqatttq
                                                                              60
    5
         <210>
               46
         <211>
               60
         <212> DNA
         <213> Artificial Sequence
   10
         <220>
         <223> Partial zinc finger domain oligomer.
<400> 46
   15
         tttgtatggt ttttcaccgg tatgggtacg ctgatgacgc tgcaaatcgc tgctggtgct
                                                                              60
         <210> 47
         <211>
               60
   20
         <212> DNA
         <213> Artificial Sequence
         <220>
         <223> Partial zinc finger domain oligomer.
   25
         <400> 47
         ggtgaaaaac catacaaatg tccagagtgc ggcaaatctt tctctacctc tgatcatctt
                                                                              60
   30
         <210>
               48
         <211> 60
         <212> DNA
         <213> Artificial Sequence
   35
         <220>
               Partial zinc finger domain oligomer.
         <400> 48
         cttgtaaggc ttctcgccag tgtgagtacg ctgatgacgc tgaagatgat cagaggtaga
                                                                              60
```

```
<210> 49
    5
        <211> 56
        <212> DNA
        <213> Artificial Sequence
        <220>
   10
        <223> Partial zinc finger domain oligomer.
        <400> 49
ggcgagaagc cttacaagtg ccctgaatgc gggaagagct ttagtcgtag tgataq
                                                                             56
   15
        <210> 50
        <211>
               55
        <212> DNA
        <213> Artificial Sequence
   20
        <220>
        <223> Partial zinc finger domain oligomer.
        <400> 50
   25
        cttctccccc gtgtgcgtgc gttggtgggt ttgtaagcta tcactacgac taaag
                                                                             55
        <210> 51
        <211> 16
   30
        <212> DNA
        <213> Arabidopsis
        <400> 51
        atagtttacg tggcat
                                                                             16
   35
        <210> 52
        <211> 10
        <212> DNA
```

```
<213> `Arabidopsis
         <400> 52
        atagtttacg
                                                                               10
    5
        <210> 53
        <211> 10
        <212> DNA
   10
        <213> Arabidopsis
15
15
15
15
20
         <400> 53
         tacgtggcat
                                                                               10
        <210> 54
        <211> 45
         <212> DNA
         <213> Artificial Sequence PCR Primer
         <400> 54
         ttcagggcgg tctctcggct tctcgccagt gtgagtacgc tgatg
                                                                               45
   25
        <210> 55
         <211> 44
         <212> DNA
         <213> Artificial Sequence
   30
         <220>
         <223> PCR primer.
         <400> 55
                                                                               44
         cgaattcggg tctcagccgt ataaatgtcc ggaatgtggt aaaa
   35
         <210>
                56
         <211> 45
         <212> DNA
```

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       <400> 57
       ttgggtgctt tgggtgctc
                                                                   19
  20
       <210> 58
       <211> 10
       <212> DNA
   25
       <213> Artificial Sequence
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       <223> ZFP target sequence.
   30
       <400> 58
       ttgggtgctt
                                                                   10
       <210> 59
   35
       <211> 10
       <212> DNA
       <213> Artificial Sequence
```

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         <223> ZFP target sequence.
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    5
        ttgggtgctc
                                                                               10
        <210> 60
         <211> 35
   10
        <212> DNA
        <213> Artificial Sequence
15 15 20 20 C
        <220>
         <223> ZFP target probe.
         <400> 60
         tatatatt gggtgctttg ggtgctctat atata
                                                                               35
         <210> 61
         <211> 10
         <212> DNA
         <213> Artificial Sequence
   25
         <220>
         <223> ZFP target sequence.
         <400> 61
                                                                               10
         agtaaggtag
   30
         <210> 62
         <211> 10
         <212> DNA
   35
         <213> Artificial Sequence
         <220>
         <223> ZFP target sequence.
```

		<400>	62	
		ttgggt	gete	10
	_			
	5	<210>		
		<211>	10	
		<212>	DNA	
		<213>	Artificial Sequence	
	10			
		<220>		
		<223>	ZFP target sequence.	
		<400>	63	
The stand with the stand of the	15	tacgtg	gcat	10
		<210>		
#177. #152.	20	<211>	10	
₩.	20	<212>		
i i		<213>	Artificial Sequence	
erio:		<220>		
	25	<223>	ZFP target sequence.	
	25	<400>	64	
		ggagat		1 0
		ggugue	gucu	10
	30	<210>	65	
		<211>	19	
		<212>	DNA	
		<213>	Artificial Sequence	
	35	<220>		
		<223>	ZFP target sequence.	
		<400>		
		ttgggt	gett tgggtgete	19

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<210> 66
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                19
    5
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                ZFP target sequence.
   10
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agtaaggtag gagatgata
                                                                               19
  15
         <210>
               67
         <211>
                19
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   20
         <220>
         <223>
                ZFP target sequence.
         <400> 67
         tacgtggcat tgggtgctc
                                                                               19
   25
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                Zinc finger domain.
         <223>
   35
         <220>
         <221>
               VARIANT
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                (13)..(13)
         <223> Amino acid 13 is "Xaa" wherein "Xaa" = Z1 wherein Z1 = Arg, Gln,
                Thr, Met or Glu
```

```
10
20
   25
   30
```

```
<220>
     <221>
           VARIANT
     <222>
            (15)..(15)
5
     <223> Amino acid 15 is "Xaa" wherein "Xaa" = Z2 wherein Z2 = Ser, Asn,
            Thr, or Asp
     <220>
     <221>
            VARIANT
     <222>
            (16)..(16)
     <223> Amino acid 16 is "Xaa" wherein "Xaa" = Z3 wherein Z3 = His, Asn,
            Ser, or Asp
     <220>
     <221>
            VARIANT
     <222>
            (19)..(19)
     <223> Amino acid 19 is "Xaa" wherein "Xaa" = Z6 wherein Z6 = Arg, Gln,
            Thr, Tyr, Leu, or Glu
     <400> 68
     Gln His Ala Cys Pro Glu Cys Gly Lys Ser Phe Ser Xaa Ser Xaa Xaa
                     5
     1
                                          10
                                                              15
     Leu Gln Xaa His Gln Arg Thr His Thr Gly Glu Lys
                 20
                                      25
     <210> 69
     <211>
            28
     <212> PRT
     <213> Artificial Sequence
     <220>
35
     <223>
            Zinc finger domain.
     <220>
     <221> VARIANT
     <222> (13)..(13)
```

```
<223> Amino acid 13 is "Xaa" wherein "Xaa" = Z1 wherein Z1 = Arg, Gln,
                                                                        Thr, Met, or Glu
                                         <220>
                     5
                                         <221>
                                                                   VARIANT
                                         <222>
                                                                      (15)..(15)
                                         <223> Amino acid 15 is "Xaa" wherein "Xaa" = Z2 wherein Z2 = Ser, Asn,
                                                                        Thr, or Asp.
                10
                                         <220>
                                         <221> VARIANT
15 15 20 20 20 The state of the
                                                                    (16)..(16)
                                         <222>
                                         <223> Amino acid 16 is "Xaa" wherein "Xaa" = Z3 wherein Z3 = His, Asn,
                                                                        Ser, or Asp
                                         <220>
                                         <221>
                                                                   VARIANT
                                         <222>
                                                                    (19)..(19)
                                         <223> Amino acid 19 is "Xaa" wherein "Xaa" = Z6 wherein Z6 = Arg, Gln,
                                                                       Thr, Tyr, Leu, or Glu.
                                         <400> 69
               25
                                        Pro Tyr Lys Cys Pro Glu Cys Gly Lys Ser Phe Ser Xaa Ser Xaa Xaa
                                                                                                                                                                                                       10
                                                                                                                                                                                                                                                                                              15
                                        Leu Ser Xaa His Gln Arg Thr His Thr Gly Glu Lys
                                                                                              20
                                                                                                                                                                                      25
```